# CLAIMS

We Claim:

1. A method of routing communications from a first node on a first bus to a second node on a second bus comprising:

a. receiving a communication from the first node including an address value having a bus number and a node number, together forming an address of a routing device which is coupled to both the first and second buses, and a routing value used to determine an address of the second node;

b. obtaining the routing value from the communication;

c. remapping the address value of the communication to correspond to the address of the second node utilizing the routing value; and

d. transmitting the communication on the second bus to the second node.

2. The method as claimed in claim 1 wherein the communication is a bus packet.

3. The method as claimed in claim 1 wherein the routing value includes the address of the second node and an offset value within memory space of the second node.

4. The method as claimed in claim 1 wherein remapping the address value of the communication includes utilizing a table index value within the routing value to obtain the address of the second node from a location within a routing table corresponding to the table index value.

5. The method as claimed in claim 1 wherein the first and second buses both substantially comply with a version of an IEEE Std 1394 standard.

6. The method as claimed in claim 1 further comprising determining if the address value within the communication received from the first node is addressed to the routing device.

7. A direct mapping IEEE 1394 bus packet for communications transmitted from a first node on a first bus to a second node on a second bus, the bus packet including an address value having a bus number and a node number, together forming an address of a routing device which is coupled to both the first and second buses, and a routing value used to determine an address of the second node.

8. The direct mapping IEEE 1394 bus packet as claimed in claim 7 wherein the routing value includes the address of the second node and an offset value within memory space of the second node.

9. The direct mapping IEEE 1394 bus packet as claimed in claim 7 wherein the routing value includes a table index value which provides an index into a routing table within the routing device.

10. The direct mapping IEEE 1394 bus packet as claimed in claim 9 wherein the address of the second node is obtained from a location within the routing table corresponding to the table index value.

11. The direct mapping IEEE 1394 bus packet as claimed in claim 7 wherein the first and second buses both substantially comply with a version of an IEEE Std 1394 standard.

12. A routing device configured for coupling between a first bus and a second bus for routing communications from a first node on the first bus to a second node on the second bus comprising:

a. means for receiving a communication from the first node including an address value having a bus number and a node number, together forming an address of the routing device, and a routing value used to determine an address of the second node;

b. means for extracting coupled to the means for receiving for extracting the routing value from the address value within the communication;

c. means for remapping coupled to the means for extracting for utilizing the routing value to remap the address value of the communication thereby forming a remapped communication with a remapped address value corresponding to the address of the second node; and

d. means for transmitting coupled to the means for remapping for transmitting the remapped communication on the second bus to the second node.

13. The routing device as claimed in claim 12 wherein the communication and the remapped communication are bus packets.

14. The routing device as claimed in claim 12 wherein the routing value includes the address of the second node and an offset value within memory space of the second node.

15. The routing device as claimed in claim 12 wherein the means for remapping utilizes a table index value within the routing value to obtain the address of the second node from a location within a routing table corresponding to the table index value.

16. The routing device as claimed in claim 15 wherein the routing table is included within the routing device.

17. The routing device as claimed in claim 12 wherein the first and second buses both substantially comply with a version of an IEEE Std 1394 standard.

18. A routing device configured to couple between a first bus and a second bus to route communications from a first node on the first bus to a second node on the second bus comprising:

a. a receiving circuit configured to receive a communication from the first node, the communication including an address value having a bus number and a node number, together forming an address of the routing device, and a routing value used to determine an address of the second node;

b. a parsing circuit coupled to the receiving circuit to extract the routing value from the address value within the communication;

c. a remapping circuit coupled to the parsing circuit to obtain the routing value from the parsing circuit and remap the address value of the communication thereby forming a remapped communication with a remapped address value corresponding to the address of the second node; and

d. a transmitting circuit coupled to the remapping circuit and configured to transmit the remapped communication with the remapped address on the second bus to the second node.

19. The routing device as claimed in claim 18 wherein the communication and the remapped communication are bus packets.

20. The routing device as claimed in claim 18 wherein the routing value includes the address of the second node and an offset value within memory space of the second node.

21. The routing device as claimed in claim 18 wherein the remapping circuit includes a routing table.

22. The routing device as claimed in claim 21 wherein the remapping circuit utilizes a table index value within the routing value to obtain the address of the second node from a location within the routing table corresponding to the table index value.

23. The routing device as claimed in claim 18 wherein the first and second buses both substantially comply with a version of an IEEE Std 1394 standard.

24. A network of devices comprising:

a. a first bus including a first plurality of nodes;

b. a second bus including a second plurality of nodes; and

c. a routing device coupled to the first bus and the second bus including:

i. a receiving circuit configured to receive a communication from one of the first plurality of nodes, the communication including an address value having a bus number and a node number, together forming an address of the routing device, and a routing value used to determine an address of a targeted one of the second plurality of nodes;

ii. a parsing circuit coupled to the receiving circuit to extract the routing value from the address value within the communication;

iii. a remapping circuit coupled to the parsing circuit to obtain the routing value from the parsing circuit and remap the address value of the communication thereby forming a remapped communication with a remapped address value corresponding to the address of the targeted one of the second plurality of nodes; and

iv. a transmitting circuit coupled to the remapping circuit and configured to transmit the remapped communication with the remapped address on the second bus to the targeted one of the second plurality of nodes.

25. The routing device as claimed in claim 24 wherein the communication and the remapped communication are bus packets.

26. The routing device as claimed in claim 24 wherein the routing value includes the address of the targeted one of the second plurality of nodes and an offset value within memory space of the targeted one of the second plurality of nodes.

27. The routing device as claimed in claim 24 wherein the remapping circuit includes a routing table.

28. The routing device as claimed in claim 27 wherein the remapping circuit utilizes a table index value within the routing value to obtain the address of the targeted one of the second plurality of nodes from a location within the routing table corresponding to the table index value.

29. The routing device as claimed in claim 24 wherein the first and second buses both substantially comply with a version of an IEEE Std 1394 standard.